# The Journal OF THE South Carolina Medical Association

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Dr. G. M. Hoge

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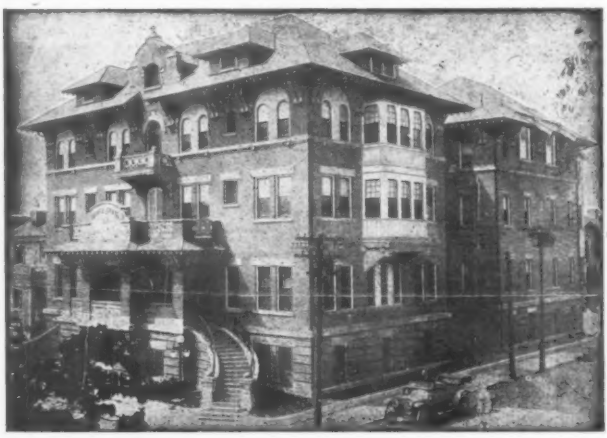

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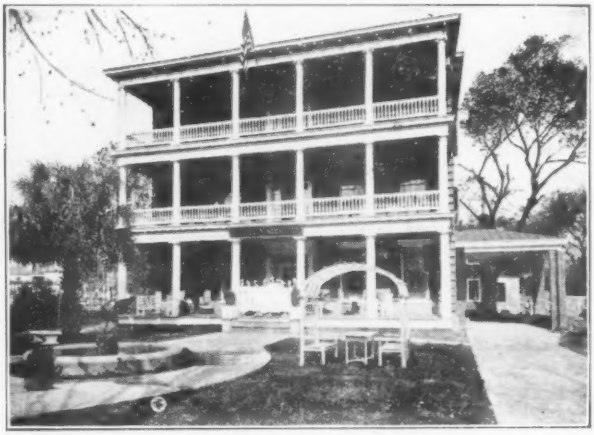

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# The Journal

## OF THE

# South Carolina Medical Association

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## EDITORIAL

### CHATTANOOGA MEETING OF THE SOUTHERN MEDICAL ASSOCIATION.

The Southern Medical Association will hold its sixteenth annual meeting in its birth city—Chattanooga, Tennessee, "The Dynamo of Dixie," Monday, Tuesday Wednesday and Thursday, November 13-16, 1922. Dr. Seale Harris, Birmingham, Alabama, President.

This meeting will be made up of eighteen sections and conjoint meetings as follows: Section on Medicine, Section on Pediatrics, Section on Neurology and Psychiatry, Southern Gastro-Enterological Association, Section on Radiology, Section on Dermatology, Section on Surgery, Southern States Association of Railway Surgeons, Section on Urology, Section on Orthopedic Surgery, Section on Obstetrics, Section on Eye, Ear, Nose and Throat, Section on Public Health, National Malaria Committee, Conference of Malaria Field Workers, Southern Hospital Association, Conference on Medical Education and Southern Association of Anesthetists. In these meetings every phase of medicine and surgery will be treated. The programs are unusually fine this year.

Dr. E. D. Wise, City Health Officer of Chattanooga, will deliver the Address of Welcome, which will be responded to in behalf of the Southern Medical Association by Dr. W. S. Leathers, State Health Officer of Mississippi, Jackson, Mississippi. Dr. C. C. Bass, Dean of Tulane Medical College, New Orleans, will deliver the Oration on Medicine; Dr. Hubert A. Royster, Raleigh, North Carolina, the Oration on Surgery;

and Dr. S. W. Welch, State Health Officer of Alabama, Montgomery, Alabama, the Oration on Public Health.

Of unusual interest will be the joint dinner session of the Section on Surgery and the Section on Radiology Tuesday night. Dr. George W. Crile, Cleveland, Ohio, will represent the Section on Surgery, and Dr. George W. Holmes, Massachusetts General Hospital, Boston, The Section on Radiology. All physicians and surgeons are cordially invited to this dinner session.

Entertainments include a President's reception with dance on Tuesday night and a dance and get-together meeting on Wednesday night. On Tuesday and Wednesday elaborate entertainments have been provided for the wives of the Physicians including sight-seeing trips over the historic points of interest, luncheon at Signal Mountain Inn, theater parties, etc. The Chatttanooga Committee are anxious for a large attendance of ladies.

For those who golf, tournaments are being arranged. Chattanooga has several wonderful golf courses.

Scientific exhibits bid fair to be of unusual interest. In the health exhibits malaria control work will be featured. In connection with the scientific exhibits there is expected to be a moving picture theater at which scientific films will be featured all during the days of the meeting.

Chattanooga excels in beautiful scenery and in points of historic interest. Lookout Mountain, Signal Mountain, Missionary Ridge and the historic battle fields alone are worth a trip to Chattanooga.

The Hotel Committee promise comfortable accommodations for all who attend.

Special reduced railroad rates have been granted by all railroads on the certificate plan. The members of the Association will receive without applying for them a certificate entitling them to reduced rates, Any doctor who is a member of his state and county medical society, although not a member of the Southern Medical Association, who desires to attend this meeting can have the benefit of these reduced rates by requesting a certificate from the Association office.

# ORIGINAL ARTICLES

## GALL BLADDER DISEASE

*By A. Johnson Buist M. D., Charleston, S. C.*

Almost the first thing that strikes one in the consideration of Gall-bladder disease is the frequency with which it occurs in the human being. In spite of the fact that gall stones are found in only a percentage of the cases of Cholecystitis, never-the-less Schroeder found the former pathology present in 12.5 per cent of all autopsies held by him and Naunyns, statistics and those of Brookbank corroborate closely his findings. When we consider that Cholecystitis always preceeds Cholelithiasis and that many cases of the former condition never have stones formed in the bladder or bile ducts we must necessarily come to the conclusion, if the statistics of these investigators are true, that from one fifth to one quarter of the human race suffer from disease of the Gall-bladder at sometime in their existence. Undoubtedly, therefore, affections of this organ must take a foremost place in our consideration of the diseases to which mankind is heir and we must give it's possibility serious thought in our attempts to explain the various digestive and reflex symptoms of which our patients complain from time to time.

Time and the knowledge that time has brought us through the use of the dead house, the laboratory, the X-ray and abdominal exploration has familiarized us with the pathology of the diseases of the pelvic cavity, the intestines, the stomach and appendix, and has enabled us to harmonize the symptomatology of the lesions of these organs to the pathology that exists, and through experience we know quite well when and how to treat these lesions. The mist that surrounds lesions in the upper righthand quadrant of the abdomen has, however, not yet been fully swept aside and even though the pathology be known the best treatment therefor is still under discussion.

Read before the Marlboro Medical Society Bennettsville, S. C., July 6, 1922.

There are several factors that enter into the production of gall-bladder disease. First and foremost is infection of the bile passages, and second, and of as much importance, is stasis of the bile. Indeed, it is doubtful if infection without stasis will produce disease and it is equally doubtful if stasis alone will produce pathology sufficient to give a symptomatology. There are certain predisposing factors that stand out prominently. Among them is age, although Thomson is able to record six cases of gall stones in the newborn and Still collects twenty cases in children, ten of these in infants. We find that in 9000 autopsies Naunyn found one in every 30 cases under 30 years of age and one in every six after sixty years of age. Bollinger found gall stones in 2.7 per cent between fifteen and thirty years 5.9 per cent between thirty and sixty 15.2 per cent above sixty, females are especially prone to Cholecystitis and Cholelithiasis. The relative frequency is usually placed at four females to one male.

Everything that tends to disturb the secretion of the bile, to alter it's composition, to impede it's flow through the biliary ducts, or to favor it's stagnation in the gall-bladder may be recorded as a predisposing cause of Cholecystitis. The apathy of age, arteriosclerosis and retarded metabolism explain the frequency of gall bladder disease in advanced age. Conditions incident

to parturition, the enforced invalidism consequent upon unrepaired genital lesions, the habitual constipation and relaxed perineum undoubtedly have much to do with bile stasis in the female. The pressure of the corset, displacing the gall bladder downward and inward, producing an angulation of the cystic duct possibly, also, is a causative factor. Stagnation of bile must necessarily occur and infection is all that is needed to produce disease Obesity, enteroptosis, sedentary habits and confinement, conditions in which there is a surcharged Hepatic circulation, are proximate causes. These facts may explain the frequency of gall stones among teachers, clergymen and obese officials. More than fifty per cent are found in brain workers, but that it is not brain work, but physical confinement and lack of exercise, is proved by the frequency with which the disease is found in the insane. The combined statistics of Beadles, Gorstell and Snell reveal that in 21.22 per cent of all autopsies upon the insane gall stones were present. According to Brockbank 21.8 per cent of those dieing from mitral stenosis had biliary calculi, showing the effect of passive congestion of the liver and sluggish bile flow due to inactivity, in the production of gall stones. Climatic conditions and diet can hardly be considered as factors for the disease is world wide, found in every climate and amongst those accustomed to the most varied diet.

Undoubtedly biliary stasis with it's concentrated bile and precipitation of it's crystaline chemistry, plus catarrh, plus infection means Cholecystitis and later Cholelithiasis.

We have briefly alluded to the conditions producing stasis. How, then, occurs infection, the other chief factor? The bile in the bile ducts and gall bladder is normally sterile as has been proved by many experiments. The most common bacteria found in gall bladder disease are, in the order named, the streptococci, the staphylococci, the colon bacillus, the typhoid bacillus and the pneumococci. It is evident that any of these may gain access to the bile passages in examining the contents of the gall bladder any of the following ways; by travelling up the common duct from the duodenum, by conveyance to the gall bladder through the blood or lymphatics, or infection may occur through bacteria filtered out from the portal blood by the liver. There is an increasing tendency to believe that infection seldom travels up the duct from the intestine for the normal duodenum contains few bacteria and when the valve of Odiis open there is a constant current of bile, which is itself in it's normal state antiseptic, into and not from the intestine. It is true that gall duct and gall bladder disease has been found where some intestinal parasite has invaded and infected the bile passages. Here the cause of the infection has been quite evident, but the condition is so rare as to need nothing more than it's mention. We are coming more to believe in infection through the blood stream. The frequency with which oral infections, tonsillitis, suppurating processes in some portion of the body and especially chronic disease of the appendix, accompanies or have preceeded gall bladder disease is more a coincidence. Some men of prominence claim that they never encounter Cholecystitis without noting also pathology in the appendix. The close blood relationship between the two organs makes the possibility of infection of the gall bladder from the appendix extremely easy. B. B. Vincent Lyon reports that he observed several cases of Cholecystitis following the recent pandemic of influenza and that he was able to recover from the bile the pneumococcus, the streptococcus, and the micrococcus tetragenus, three organisms so commonly seen in that epidemic. In several of these cases he proved an infectious gastritis and duodenitis existed and he believed that in these cases the infection of the bile passages extended directly from the intestine. Is it not possible that in a small percent-

age of cases infection takes place by transmigration of the colon bacillus from the duodenum or colon? You will recall the proximity of the gall bladder to both of these structures. The frequency with which we find these structures adherent, or if not adherent united one to the other by flimzy adhesions, suggests the possibility of pre-existing inflammatory disease of the duodenum or colon accompanied by a localized plastic exudate with adhesions to the gall bladder and subsequent infection of the latter organ in which the bile has become stagnated because of it's loss of freedom of movement and power of contraction.

The symptoms of gall bladder disease are seldom characteristic; in fact they are often most vague, but this very vagueness together with our knowledge of the frequency of the malady should put us on our guard.

It is often only by a process of elimination that we can arrive at a positive diagnosis. The early manifestations of inflammation of the gall bladder or of gall stones will practically never be referred by the patient to the region of the gall bladder or bile ducts. The patients refer their trouble to the region of the stomach and not to the liver. "Indigestion" is perhaps the earliest symptom and it may be the only one, and persist for years. It may show itself in the form of nausea, vomiting, belching, eructations of gas and epigastric distress. These symptoms may be more or less constant. There may be periods during which the attacks of "indigestion" are most severe, and then they may entirely disappear only to recur at a subsequent date. There may or may not be localized distress or pain present and this distress varies from a local soreness or burning gnawing pain to a colic so severe as to produce in some symptoms of collapse. The dull pain is usually due to some irritation or inflammation of the gall bladder and it's over-distention with bile, while the sharp, colicy, agonizing cramps indicate some obstruction in the bile ducts. The ingestion of food has the effect of increasing the distress and the colicy pains can be produced by placing food in the stomach or relieved by the emptying of that organ. The normal contractions of the stomach are accompanied by similar contractions of the gall bladder, while rest of the stomach produces a similar state in the gall bladder, hence the pain in the latter organ when the former attempts to functionate, the pain may be referred to various regions. It frequently radiates to the right subscapular region and occasionally to the left; to the epigastric region or umbilicus; to the front of the chest and neck and down the arm. Ochsner says that tenderness can always be elicited on deep pressure over the gall bladder and Boas describes an area of tenderness which is present in a majority of those suffering from Cholecystitis. This area is found to the right of the 10th dorsal spine.

Jaundice is a rare symptom. Only a very small proportion of the cases of Cholecystitis or Cholelithiasis ever become severely jaundiced. When this symptom is observed it is due to the impaction of a stone in the common or hepatic duct, to an infection of these ducts or to pressure of a large stone in the cystic duct upon the common or hepatic duct. Such jaundice is almost always preceeded by colic, it increases gradually until the obstruction is over-come and then gradually fades away. Recurrent jaundice is almost pathognomonic of a "floating" stone in the common duct. When the jaundice is due to carcinoma involving the ducts or from a growth in the head of the pancreas the jaundice is painless, steadily increasing and does not disappear.

Fever may or may not be present. There are few lymphatics in the gall bladder and therefore slow absorption, hence when infection is confined to the gall bladder fever may be absent or only slight. Chills, fever, sweats—resembling malarial attacks—accompany acute infections of the bile ducts. Where the fever is constant and of a septic type, it indicates that the infection has

spread to the liver or surrounding structures.

Recurrent attacks of the condition called "biliousness", of migrain or sick headache or otherwise unexplainable attacks of arthritis may alone be the manifestations of gall bladder infection.

The most rational treatment of infection of the gall bladder is still a matter of debate. Where there are gall stones present they must be removed and in this connection I might say that the X-ray is of little value in assisting in the diagnosis. In only a small percentage of cases can the Roentgenologist demonstrate gall stones. The X-ray is of value, however, in assisting us to arriving at a diagnosis by a process of elimination. It can eliminate the stomach and duodenum as the source of the symptoms and make us focus our attention upon the gall bladder. Where there are stones or constrictions in the bile ducts they must be treated surgically. Where there is contraction of the gall bladder or infiltration or infection of it's wall throughout it must be removed. These are pathological conditions where the rational treatment is clearly indicated and we do not hesitate to adopt the most radical measures. The tendency in the surgical world today is to remove the gall bladder in all cases of Cholecystitis, with or without drainage of the common or hepatic ducts as may be indicated. Although I may place myself in the minority by so doing, I cannot agree that this is always best. I am not convinced that the gall bladder, like the appendix, is a useless, functionless organ. Let me recall to your minds the fact that the liver cells are constantly working and secreting bile, that this bile amounts to from a pint to a pint and a half in 24 hours. This bile flows into the hepatic duct and thence to the common duct and towards the duodenum. At this piont it reaches the Ampula of Vater, the exit of which is closely guarded by the Valve of Oddi, which valve keeps the duct firmly closed until such time as food enters and remains in the duodenum. At such time the valve relaxes and the bile flows into the gut to take it's part in the digestion of food. At other times the valve is closed and the bile is dammed back through the cystic duct into the gall bladder where it collects and remains until such time as it is needed. The gall bladder is richly supplied with muscle fibres, is capable of distention and contraction and, when called upon to do so, rapidly empties the bile within it into the duodenum. The anatomy and physiology of the structures shows us that nature intended bile to be poured into the duodenum only at certain times. The contractions of the gall bladder synchronizing with those of the stomach prove this. Now let us consider the effects of the removal of this viscus. It has been shown by Flexner that bile undiluted or unmixed with mucus, entering the duct of Wirsung will, after a while, produce a pancreatitis, but that if mixed with mucus no such inflammation occurs. We are all aware of the fact that the common bile duct and pancreatic duct not infrequently unite proximal to the Ampula of Vater. If the gall bladder be removed from what source will this necessary mucus come? Mann and Judd have proven that in many cases after Cholecystectomy there is a permanent relaxation of the Valve of Oddi and a constant flow of bile into the duodenum and that there is not necessarily a back pressure in the bile ducts and that this constant drainage cures the infection in the duct. That is true, but it is also true that many of these patients suffer from a chronic diarrhoea. Where the valve of Oddi does not relax there is a back damming of bile, a dilatation of the common and hepatic ducts to many times their normal size and not infrequently a biliary cirrhosis of the liver develops, and should the anatomy permit it, a chronic pancreatitis. It seems, then, to me, that the gall bladder has a function and that it's indiscriminate removal in all cases of Cholecystitis is not justified. Opposed to this

view are the facts that so many cases of Cholecystotomy are not cured. That gall stones recur in the gall bladder, that the infection is not overcome and that the patient is but temporarily relieved. Lyon has, by means of his duodenal tube and withdrawal of bile from different parts of the biliary apparatus, demonstrated the presence of infection of the gall bladder and ducts after Cholecystotomy and claims better results by this method of treatment than by operation on simple uncomplicated cases of Cholecystitis.

The thought occurs to me that the reason why Cholecystotomy fails, in so many instances, to cure, and that Cholecystectomy is now the operation of choice, is because we are often so late in recognizing and operating upon cases of Cholecystitis. In many cases years have elapsed since the onset of the disease; the invading bacteria have become well settled in an environment of stagnated bile and both microscopic and macroscopic changes have occured in a viscus that makes its removal imperative.

It has been said that of every hundred cases of chronic indigestion forty are due to error in diet, twenty to the stomach itself and the other forty to lesions of the pancreas, duodenum, appendix or gall bladder. An early recognition of the disease under discussion might by proper instructions in diet and hygiene and by the removal of foci of infection save our patients not only years of discomfort and suffering, but conserve for them an organ that is not without its uses and prevent them from being subjected to an operation which is not without mortality and morbidity.

## MALARIA IN CHILDHOOD

*By R. M. Pollitzer, M. D., Charleston, S. C.*

Malaria is not a rare disease, neither is it a new one. In all probability this infection was first, insofar as we know imported from Egypt into Greece. A thousand years before the birth of Christ it is mentioned in the literature. Hippocrates and Plato are said to have clearly described it. That very remarkable Englishman, Sydenham in 1723 accurately word-pictured malaria, though of course he knew little as to its etiology, for it was not until 1880 that Laveran working in his laboratory in Algeria found the Plasmodium Malariae. Ross proved in 1898 that the mosquito is the disseminator of the blood parasite. It is impossible to accurately estimate the incidence of malaria; for many who have the disease never see a doctor and many more cases are unrecognized, especially the chronic types and those in infancy. Yet we do know that in the South it is frequent, and during the past year in South Carolina there were 176 deaths, which however is a marked reduction from previous years. In Fairfax (our meeting place today) in 1920 there were 287 cases, reduced in 1921 to 35. This splendid public health work is most encouraging. For this reduction in Malaria has not been an accident, but brought about by the U. S. Public Health Service and our State Board of Health. Just as in the Canal zone this plague has been subdued, so in a short time in the Southland it will be conquered, chiefly by drainage. However today, right now, it is costing the South annually 50 million dollars. I have no intention of fully covering the subject of malaria, for that would require hours and days, but I do wish to point out some of the important facts in

**Read before the Eighth District Medical Association, June 14, 1922, Fairfax, S. C.**

diagnosis and treatment especially with reference to children. It is unnecessary to discuss with you who are practical men, the subject from the laboratory or the pathological side. Our endeavor as doctors is to recognize our cases, and to properly treat them. Of course as in all infections we must consider ways and means of protecting the general public. But by curing each case, and screening it while infected, we do prevent the mosquito from getting access to the parasite laden blood.

The impression has commonly prevailed that Malaria is rare in children. This is an error. It affects all ages even the newly-born. Deadrick says that "children are more frequently affected than adults, because of their more delicate skin, sounder and more prolonged sleep, and their inability to defend themselves against mosquito bites." "Of 2,073 cases of Malaria observed by DeBrun 1,065 were children under 8 years. The percentage of infected children in a given locality is the index to the prevalence of malaria in that region." Further this disease is more fatal in the young. Of 2,377 deaths tabulated by Strachan, 1,703 occurred in patients under the age of five." In various parts of Africa Koch found from 80 to 100 per cent. of children under the age of two to be infected." It is unnecessary to discuss the various etiologic factors, such as climate, altitude, time of day etc. These things are now common knowledge.

Further it would be consuming your time to no purpose to talk to you of malaria in the adult, for chill and fever at more or less regular intervals especially when conjoined to enlargement of the spleen is so clear that he who runs may read. In the child however especially the little child or infant the symptomatology is frequently quite different. And right here let me parenthetically state that unless you are so fortunate or so scientific as to examine or have examined the blood of every fever patient you must rely on the history and the physical examination as the basis for your diagnosis. By no means would I have it thought that the microscope is not most valuable, but we must admit that oft time the parasite is not found on routine examination of the ordinary smear, even when present within the body. On the other hand I do believe that a leucocyte count is often of great value in excluding septic condition or other acute infections. Furthermore a rough hemoglobin estimation by the Talquist scale, showing marked reduction is always suggestive, when combined with other findings.

Malaria is poorly described in the usual text book on pediatrics, for most of our authors have had very slight actual experience with this disease. My experience with Malaria has not been very large, but I have been in the position of seeing many cases which had been treated previously by one or more doctors before being brought to me. Over and over again I have been struck with the fact that the diagnosis is made on insufficient evidence such as simply an unexplained fever which has lasted a few days. The per cent. of times that fever is accounted for in children bears a direct relation to the number of times a physical examination is made. As a rule a case that is diagnosed and treated for malaria and then brought to me is almost sure to have some other condition, otherwise it would have recovered. On the other hand patients in whom malaria is not even suspected are the very ones who have that condition, unless some positive diagnosis has been made. I firmly believe that in this state more often we err in saying that a child has malaria than we do with any other disease. Just as some men think because a high percentage of negroes have syphilis it is safe to consider all as syphilitic. By so doing you will undoubtedly get all the syphilitics that come to you, but you do harm to the others. Besides that is not practicing medicine, for all of diagnosis and necessarily prognosis must be omitted.

How then does Malaria differ in the child. In the first place, the chill is rare. Usually it is replaced by a certain blueness of the skin or merely a coldness of the skin will follow. There is some prostration. Quite frequently a convulsion is substituted for a chill. While most convulsions in early life are due to bad feeding or spasmophilia yet this must ever be kept in mind. In early life the digestive system like the nervous is easily deranged thus showing first the onset of a disease. Vomiting may be due to many causes, but as a rule we do find vomiting in malaria. Along with this there goes a disturbance in motility and secretion of the bowel, producing a diarrhea. At times this leads to the snap diagnosis of colitis. The temperature as you know in children is by no means under so good regulation as in later life and perhaps for that reason the periodicity of the fever is frequently disturbed. Also unless the thermometer is used by some capable person, the skin temperature is very misleading. I have found all accounts of temperature variations by the family in this condition to be untrustworthy. Many sick children especially if lying down will be found to have rales in the chest. In malaria it is common to find them. This might easily lead us to suspect a bronchitis and there rest satisfied. Furthermore though rarely we do have a transient consolidation, which probably is not hypostatic, forcing one to diagnose pneumonia. Holt cites such a case. An enlarged liver from one cause or another is so common in childhood that it is here of no moment. An enlarged spleen though should always make us stop and consider. But by no means should we pin a diagnosis on this alone. For often in acute conditions does the spleen markedly enlarge. Leaving out typhoid, I might mention meningitis, and infantile paralysis as those I have noticed as frequent causes for enlargement. And conversely, you cannot and must not rule out malaria because there is no splenic enlargement. Contrary to the books it has been my experience that until several weeks have passed we can not palpate this organ. Therefore in chronic malaria (that is those cases that have escaped treatment or had insufficient treatment) a large spleen will be of greater diagnostic aid than in the child just taken ill where you are most anxious to tell yourself and the family the name of the malady. It is of no value to know that quite often albumin and casts are present in the urine, though blood of course is suggestive, provided scurvy, stone and a few other conditions are eliminated. Nevertheless a urinalysis in all cases thought to be malaria should be done so as to include or exclude pyelitis, for I know of no condition that more closely simulates paludism. Next perhaps in order of frequency is otitis media, purulenta or abscess of the middle ear. Unless the patient is old enough to tell you what is the matter you can not recognize this without an examination of the middle ear, unless the drum ruptures and the pus exudes. Over and over I have seen babies heavily dosed with quinine for fever without any improvement, because they were suffering from this condition. Extreme malnutrition which often causes fever, and tuberculosis because of its irregular temperature are also at times thus labeled. Nearly all cases of typhoid in children are first called malaria, which is less reprehensible than in the other instances. We might ask ourselves whether the diagnosis of malaria is so very difficult and what are the reasons for our failures?

The answer depends to a certain extent on the individual. In general however it will be found that the diagnosis is based purely on a history of fever which is generally irregular without any obvious explanation. And then the disorder having once been labeled even though recovery does not ensue in a few days with appropriate treatment, the diagnosis is persisted in. Where however the urine is examined properly, and other causes of fever are investigated this can not happen. When a case of real

malaria is overlooked it is usually because the physician is expecting the same symptoms as in the adult. He is not thinking about the vomiting, the diarrhea and possibly convulsions or coma. Nevertheless regardless of the ability of the practitioner, there are cases of malaria which will not be recognized without an examination of the blood-smear or the therapeutic test. However the therapeutic test should not precede a thorough physical examination. In other words do not give quinine to all sick children just on suspicion.

Let me here set down a few salient facts abstracted from my case-records of malaria. A white male M. D. N. of 9 months was brought to me after having been treated by several physicians. For 2 weeks he had been fretful and feverish. He was very pale. There had been some diarrhea. There were a few rales in the chest. Urine was negative. His blood showed the organisms.

A white girl S. L. K. aged 2 years had been suffering for 2 weeks with vomiting and diarrhea during Aug., 1917. The stools contained mucus, but no blood. She had fever and a cough. She was found to have the estivo-autumnal parasite. Contrast these two which undoubtedly had malaria and promptly recovered under quinine treatment with H. K. a white female of 9 months who had been having attacks of fever and vomiting of several days duration for 2 months before her urine was examined and found to contain much pus. In order that we might gain a still better idea of the symptomatology of malaria in the child there are a few important findings gained from some cases seen in Charleston at the Roper Hospital which I wish to present.

1. W. Fem. B. S. age 4 years on admission stuporous.t.102 1-2,p.130,r.40. 2 days ago began to vomit and had pain in abdomen. Pallor then noted. Vomiting continued. Bowels have been loose. Examination shows nothing except herpes lab. and nystagmus. Spleen not palpable. Urine negative. Hemoglobin 75,wb.c. 7,400. Many tertian parasites present. Recovered.

2. B. A. w.male, age 2 yrs. "2 days ago awakened during the night with fever and vomiting. Fever continued and 48 hrs. later after being very restless he had a convulsion. Later in the day had 5 more. When seen the temp. was 100, p. 130 and r.50., though a little later the temp. rose to 104. Examination practically negative. Leucocytes only 6,800. Tertian p. present recovered.

3. C. L. w. female age 5 yrs. took sick 4 days ago with no definite symptoms except fever the next day. Then became delirious and a little later comatose. Examination showed an enlarged spleen, albumin in the urine, and tertian parasites in the blood. Recovered.

4. B. B. c. female, aged 11 yrs. had been sick in bed about three weeks, with constant fever and weakness. Has not had chills or convulsions. There has been headache and abdominal pain present. Not eating. Examination disclosed marked anemia, anxious expression to face. Very rapid weak heart. Spleen not palpable. The blood showed a hgb. of 25 to 35 w.b. count of 9,340 and red cells reduced to 1,360,000. The urine had from 2 to 4 plus albumin with very many hyaline, granular and epithlial casts. In other words a nephritis. She had a 4 plus infestation with the tertian parasite. She went home a month later greatly improved.

I should like to take up some unusual instances of estivo-autumnal infection, for this type of the disease is by no means uncommon with us, but intead I shall spend my remaining time discussing the subject more generally. In considering the differential diagnosis I should have warned you against mistaking the sudden onset of malaria with cerebro spinal symptoms for meningitis, which can easily be done. Indeed a spinal puncture is sometimes necessary. As a rule an exposure to great heat as in summer in the field, where malaria has

been present for some time in a latent form in the person seems to be a predisposing factor to this. I saw such a meningeal case near Summerville, in the Summer of 1920. This boy was 5 yrs. recovered. These convulsive and comatose children however do not always get well. For I am sure that you have seen some die within a day as I have. Now just a few words as to treatment. The average person when sick welcomes his physician, but as soon as his acute symptoms such as fever, or pain have gone, the doctor is not wanted. At least the ambulant patient does not come to your office unless he is suffering or scared. Nevertheless it is your duty to your patient and to your communtiy to see that an individual is cured. By cured I mean that he has been treated long enough not only to improve, but to get rid of his parasite. Bass of New Orleans who has written very extensively and thoroughly on the treatment of malaria after a study of over 25,000 cases in Mississippi from 1916 to 1918, states that very few people are disinfected when treated in the usual way. Indeed it is known to you all that individuals have recurrences of this plague at different seasons or on going to other localities. The reason is that they have never been cured. The parasite was merely in a different form deep in the body. He advises and urges that all malaria subjects should have quinine treatment for at least 8 weeks, and he has found that over 90 per cent of those treated will thus cease to be carriers. He advises that the usual sulphate of quinine be given by mouth three times a day 10 grains each, for 3 or 4 days then the treatment be kept up but the drug administered but once daily, preferably at bed-time. It is true however that some individulas may require 12 weeks treatment and that in desperate cases administration, intramuscularly or intravenously is necessary. These however are the exceptions. In children the dose of course is reduced. According to his figures, we should give but 1-2 grain of quinine three times daily under the first year. 1 gr. during the first yr. 2 gr. in 2nd yr. and 3 at 3rd and 4th. During the 5, 6, & 7 yr. 4 gr. t.i.d. and at the 8, 9, & 10 yr. but 6 gr. and not administering 10 gr. at a dose until the 15th yr. This is of course the scale laid down for the average case. Hereto, treatment must be continued for 8 weeks in order to cure our patient. The matter is simpler than in the adult for Johnnie's ma is more apt to make him take his medicine than she is to continue taking hers. While Dr. Bass is a most eminent authority and he has the official strength of the National malaria committee behind him yet I would not be dealing fair with you were I not to say that some writers give smaller doses, and others larger. I myself who of course have had but a small experience prefer to give more quinine than recommended even at the risk of wasting some of this valuable drug which when first introduced was actually worth its weight in gold. Today while intrinsically less precious it is a sine qua non. We must never forget that it is an absolute specific. As a rule other things being equal I find myself ordering after the first birthday from 8 to 10 grs. of quinine daily. During the 2, & 3 yr. about 10 to 15, and at the 4 & 5 about 15 to 20. gr. Of course these large doses are not kept up for more than 24 hrs, when there is a reduction, and again in 24 hrs. the dose is reduced. Further it seems best to give the quinine to children at more frequent intervals. As a rule it is easily taken in solution or suspension insyr. of yerba. santa. Holt advises 8 to 12 grs. during the first yr. and from 2 to 6 yr. 15 to 30 gr. daily. It is not unlikely that your dosage is different but after all the best plan is treating your cases is to treat them according to what gives you the best results. However I would stress again, that Bass is of the opinion that less than 10 per cent of doctors actually cure their malaria cases. So then all that I have been trying to tell you, this while, is that Malaria occurs in

children: that it is a common disease, that it manifests itself in various ways, especially by vomiting and diarrhea, and frequently convulsions. And further if after 3 or 4 days of quinine treatment there is no improvement, you should again carefully search for some other disease.

## THE IMPORTANCE OF CERTAIN MASTOID AND LATERAL SINUS INFECTIONS OFTEN MISTAKEN FOR COMMONER GENERAL INFECTIONS.

*By J. W. Jervey, M. D., Greenville, S. C.*

In the past few years my attention has been repeatedly and forcefully called to certain cases of mastoiditis which have gone unrecognized for months and even years. Most often these cases have been in the hands of the general practitioner, without reference to the specialist, though often enough and even too often (for is not even once "too often"?) they have been unrecognized by laryngologists, and,—I blush to confess it—myself included amongst the errant consultants. These cases have, of course, all been of the chronic type of mastoid infection, but their proper and early diagnostication is often a matter of very present importance to the hearing, health and even life itself of the unfortunate victim. It is by no means seldom that the symptoms fail to point directly to the seat of the disease, and it is then only by a systematic effort at exclusion that the real offending area is first suspected. It is then that the history of a pre-existing middle ear disease is frequently, though by no means invariably, elicited, and careful study of clinical details combined with laboratory and X-ray findings give a leading clue to the correct interpretation of the elusive syndrome.

(Read at the annual meeting of the South Carolina Medical Association at Rock Hill, S. C., April 18-20, 1922.)

(Read by invitation before the Raleigh, N. C., Academy of Medicine, August 31, 1922.)

Many of these cases have been and are today being diagnosed and treated by the attending physicians as malaria, atypical typhoid, tuberculosis, and what-not, purely because of the erratic, though often apparently periodic temperature curves and vague symptoms, and because no demonstrable organic change is found that would otherwise explain the phenomena. And manifold what it should be is the mortality, because suspicion is not early enough directed to the real seat of the disturbance. For it is undoubtedly true that if these cases are recognized early enough and operated on in time, the mortality is practically negligible; while later, when vital structures have been invaded (as will almost inevitably happen eventually) the mortality is excessive.

It appears to be true, and is certainly so in my limited experience, that in many individuals the mastoid area is peculiarly tolerant of a low-grade chronic infection, and presents but little definite semeiology. But these cases progress just as surely as the others, and it is not until the intracranial wall is penetrated or the labyrinth or lateral sinus wall invaded, that symptoms begin to be assertive. But it is the cases confined to the mastoid area and those just commencing invasion of the lateral sinus that are usually the most puzzling; and it is to these that I should like to direct your attention, illustrating my meaning by a few very briefly abstracted case reports, as follows:

CASE 1: V. A., female, white, aged six years. Eleven months previous to my first seeing this child she had an attack of influenza, at which time earache developed and both ears discharged for several weeks. Ten days before I saw her intense pain developed in right ear and mastoid and right mastoid area was said to have been oedematous and tender on pressure. The ear soon discharged freely and pain was relieved. When I saw the case first, there were no definite symptoms of mastoiditis,

and no visible perforation of the tympanic membrane which looked approximately normal. I removed bad tonsils and adenoid and advised careful watching of the case. Six months later—seventeen months after first attack—the patient was brought in again by the attending physician. For several days she had been having a temperature ranging from 101 to 103, pain and discharge in both ears. At this time temperature was 101, pulse 168, both ears discharging freely. There was pronounced tenderness over right mastoid, thickening and deep inflammation of the right drum membrane, and marked sagging of the posterior superior canal wall. Radiographs plainly disclosed a pathological condition of the right mastoid, with cloudiness and destruction of cell walls. At operation the entire mastoid was found filled with pus and necrotic cells, and the antrum was full of pus. Amputation of the tip was necessary. Only the merest shell of the mastoid remained. Uneventful recovery. Evidently this case had been in progress a long time and diagnosis could and should have been made sooner.

CASE 2: D. F. S. female, white, aged five years. Treated for past year or more for chronic indigestion and glycosuria. Forty-eight hours before consulting me pain occurred in right ear. No discharge and no history of any. Subject to sore throat and expistaxis. Examination disclosed diseased tonsils and adenoid. Mastoid tenderness, right, and congested tympanic membrane; no perforation; sagging of posterior-superior canal wall; temperature 103 1-2, pulse 136, and weak. Mastoid operation revealed large quantity of granulation tissue and pus in antrum and cells—a condition of evidently long standing. Uneventful recovery.

CASE 3: R. C. F., female, white, aged 22 years. Has had occasional tonsilitis for several years. Appendectomy two years before consulting me, since which time she has lost weight from 140 to 118 pounds. Abscess right middle ear six months later. Recently has developed severe arthritis left knee and ankle. Tonsils and teeth suspected by attending physician. Temperature 99, pulse 100. Definite indications of right chronic mastoiditis. Operation revealed merest shell of cortex and posterior canal wall; antrum granulations. Evidently long standing low grade infection. Uneventful recovery.

CASE 4: J. A. M., female, white, aged 32 years. Four weeks before consulting me had pain in right ear followed in a day or two by discharge. Had been feeling badly generally for some time, with anorexia. Diagnosis of mastoiditis easily made at this time, but the disclosures of the operation revealing extensive disintegration of mastoid cells, requiring amputation of tip, and large polyp growths in deep canal and middle ear suggested the probability that the infection was of long standing. Uneventful recoverey.

CASE 5: J. W. B., male, white, aged 34 years. Had influenza a year and a half before I saw the case. Three or four months ago had both drum membranes incised by an otologist in another city. Right ear never discharged. At this time mastoiditis easily diagnosticated in left side, and operation showed cortex broken down and through by necrotic processes, and large mastoid filled with carious disintegration and old granulation. Uneventful recovery.

CASE 6: M. Y., male, white, aged 19 years. Right ear has discharged off and on and considerable granulation shows in middle ear especially at eustachian orifice. Left canal filled with impacted cerumen, which, on removal discloses an apparently good membrana tympani. Removed pus tonsils and adenoid. Five weeks later severe pain in and behind left ear, with copious sero-sanguineous discharge. Just above and behind left auricle is a scar an inch and a half long which patient now says is the result of abscess in this locality several years ago. Diagnosis of

mastoiditis clear, and operation revealed very large area of necrotic bone and granulation tissue, with broken down cells all the way to the deep tip of mastoid. Uneventful recovery.

CASE 7: F. F. M., male, white, aged 50 years. Has had severe "cold in head" for several weeks. For several days past has complained of pain all over right side of head. Right drum membrane inflamed and bulging in upper posterior half. This was incised, releasing a sero-purulent discharge which cleared up within ten days, leaving ear looking apparently normal. For three weeks this patient's temperature ranged from normal to 102. At times he would seem perfectly well, and again he would complain bitterly of the pain in the right side of head, for which no clinical explanation could be found. He would occasionally become fretful and mildly delirious, swearing like a trooper, and remembering nothing at all about it. He would at times beg for morphine to relieve his pain, and once even broke his confinement in the early hours of the morning and sought another physician begging for the opiate. The possibility of his being a drug addict was seriously considered. At one time he seemed so well he was discharged from the hospital, but returned in twelve hours with a temperature of 102 and the old right parietal pain. The previous middle ear infection, though seemingly absolutely cleared up, was again taken into consideration. This, with definite mastoid cloudiness on transillumination and in the radiograph, coupled with a polymorphonuclear count of 84 per cent, the area of pain, and the erratic temperature curve led to a diagnosis of chronic mastoiditis with probable lateral sinus involvement, in spite of the absence of tympanic or deep-canal clinical evidences and the absence also of mastoid tenderness. The operation proved the event. Free pus was found in the antrum and about the bony wall of the lateral sinus. The sinus was uncovered and a great mass of infective granulations were curetted from its surface for a distance of three quarters of an inch at the knee. Evidently a case of long standing. Uneventful recovery.

CASE 8: M. G., female, white, aged 5 years. Seven months before consulting me on this occasion the patient's tonsils and adenoid were removed. At that time she complained of occasional earache, but no clinical evidence of middle ear or mastoid infection could be demonstrated. Seven months later a severe acute subperiosteal mastoid abscess developed within a space of five or six days. Operation revealed broken down cortex, posterior canal wall necrotic for two thirds of its depth, mastoid cells filled with pus and chronic granulations down to and including tip, and upward through roof making it necessary to expose the dura for an area about one-third of an inch in diameter. Antrum and middle ear packed with chronic inflammatory granulations. No doubt the process had been going on unrecognized since before she was first seen seven months previously. Owing to extensive necrosis of post-auricular soft tissues, healing of the wound was delayed for seven weeks. Otherwise, uneventful recovery.

CASE 9: J. L., female, white, aged 13 years. For a great part of twenty-six months, following removal of tonsils and adenoid, this child complained of slight pain and deafness in one ear or the other. When I first saw her, eighteen months after the tonsillectomy there was tenderness on pressure over left mastoid antrum and tip, and slight redness and sagging of posterior-superior canal wall, with a retracted drum membrane. Temperature 100, pulse 108. radiographs showed apparent cloudiness of both mastoids. Differential blood count normal. Conditions cleared up in a few days without operative interference. Eight months later, during which interval occasional sharp pains in left mastoid were complained of, I again saw the patient. The clinical signs were more pronounced in

the left ear. The X-Ray report was that both mastoids were partially sclerotic. The left mastoid was opened, and found to be of ivory-like consistency through to the antrum, which was situated very deeply and was filled with fluid pus and granulomata. Uneventful recovery. Undoubtedly this was a case of several year's standing, and the sclerosing process was Nature's aid in checking disintegration of the mastoid. Probably we shall hear from the right ear later.

CASE 10: E. W., female, white, aged 7 years. Two years before this consultation I removed tonsils and adenoid. Child has not been strong. Has been treated for "acidosis" "influenza", severe epistaxis, "malaria" and has even been under suspicion of typhoid fever and tuberculosis. At time of present record has just had sharp pain in right ear and high temperature, and discharge from ear lasting four or five days and up to this time. This seemingly proved to be a furuncle of the canal and recovery was prompt. Six months later a severe left orbital cellulitis occurred with conjunctival discharge. No specific infection could be isolated microscopically. Temperature only slightly elevated. It was not erysipelas; there had been no injury; there was no sign of nasal accessory sinus disease. However, the *right* membrana tympani was slightly bulging in posterior-superior third. Four days later the eye was well, and there was a translucent bleb on the right drum membrane at the site of previous bulging, but no pain. This persisted with varying temperature and four days later was incised, evacauting quantity of sticky- sero-purulent fluid, with heavy infection of staphylococcus. temperature 102 3-5. Differential blood count showed 79 per cent polymorphonuclears. Next day conditions were better, but X-Ray examination showed cloudiness of right mastoid. Two days later there appeared a furuncle in the right external auditory canal, discharging. During this time a large boil appeared on right buttock and an enlarged gland in right groin. There were one or two other boils on trunk, and it was thought the erratic temperature might be due to this furunculosis. The large boil on the buttock was opened and two days later temperature was normal. The furuncle in the external canal had cleared up; the drum membrane appeared normal. In a few hours the temperature was again erratic. The mastoid radiographs were submitted to Dr. R. W. Gibbes, of Columbia, for consultation. He concurred in the diagnosis of right mastoiditis and advised operation. The mastoid was opened and exenterated of broken down cells, mucopurulent secretion and pus. The bony wall of the lateral sinus was sloughed away over an area of six by twelve millimeters at the upper curve. The sinus at this point (which showed in the radiograph) was so far forward as to be somewhat in the way of entrance into the antrum. There were infective granulations on the sinus wall which were curetted away. The antrum and middle ear were filled with pus and thick sticky ropy muco-purulent secretion, which showed quantities of pus cells microscopicaliy, but no bacteria with Gram stain. Recovery was prompt and complete.

In all of these cases every known method of diagnostic value was brought into play as the occasion seemed to arise; though I confess that in some of them the occasion did not impress itself upon me as soon as it might have, that is, in retrospect. All or nearly all of them were treated for varying lengths of time for various other diseases, and all made complete recoveries after the diagnosis (often extremely difficult) had been worked out and the classical remedy applied. They are not selected cases, but represent a consecutive series of cases of chronic mastoiditis that have come under my care and recognition, It is not too much to say that many of them would have gone sooner or later to a fatal termination if they had remained unrecognized. Ballenger very aptly quotes Macewen to the effect that one who has a chronic middle ear and mastoid

infection is like a person with a charge of dynamite in the head, and remarks that safety lies in removing the "charge".

The extreme cases, of course, are those in which vital structures are about to be invaded, and in my experience at least, threatened invasion of the lateral sinus is by far the most common *denouement*. In such cases, it cannot be said or emphasized too often, early diagnosis is likely to be the only hope of the patient; and this is possible in nearly every instance if the diagnostician is energetic and alert. The history of previous ear trouble is usually present as a clue; and this with the otherwise inexplicable eccentric temperature curve, the intervals of apparent normality, the vague parietal pains, the differential blood count and the Roentgen plates (which are of inestimable value) are usually sufficient to establish the diagnosis even in the absence of evident clinical pathology in the drum membrane, deep canal, or over the mastoid area itself.

In the early stages of lateral sinus thrombosis only the outer wall of the sinus is involved. This is first an agglutination and conglomeration of infective material on the surface of the sinus wall. Slowly but surely the infection penetrates the wall and a septic clot is started on the intima of the great vessel. Once this begins, it spells fatality if unchecked, and is not usually stopped except by operation carrying with it a mortality of perhaps 75 per cent, or even greater, while with early diagnosis and operation before the sinus wall has been penetrated by the septic agent the mortality is almost nothing in experienced hands.

Surely this is an adequate plea for careful study and prayerful consideration of these obscure and atypical febrile cases at the hands of the general practitioners!

DISCUSSION:

Dr. J. H. Taylor, Columbia:

I wish to emphasize here the value of knowing as soon as possible the bacteria which are causing the infection in mastoid cases. I used to think that these mastoid people were a little over-enthusiastic, and that there was a bit of charlatanism about the X-Ray folks. I wish to apologize now for those thoughts.

I have a boy three years old who complained a short time ago of a little pain and discomfort but not indicating where. I looked at his throat and found that his tonsils were a little reddened. He had no temperature. He had eaten ice cream that afternoon, so we gave him some milk of magnesia. The next night he cried again, so I sent for the ear man, who said that he had a slight reddening of both drums. The next night his temperature was 100, so I had Dr. Caughman puncture the right ear drum, and the next morning he got out a good deal of serum. Cultures were made, and the pneumococcus was found. The pneumococcus is the bacterium which causes the absorption of that thin plate of bone next to the meninges of the brain and when the pneumococcus gets through, there develops meningitis. We had some X-Ray pictures made before the puncture, on the strength of which Dr. Rogers told me that both mastoids were involved, but I was rather skeptical. But when we found the pneumococcus to be the infecting organism I was quite willing to have the mastoid opened. There was pus in it. Now, the boy had very little temperature. A fact noticeable frequently in these mastoid infections.

# CREEPING ERUPTION, AN EFFECTIVE TREATMENT, WITH CASE REPORTS.

*By H. A. Mood, M. D., Sumter, S. C.*

Creeping Eruption is a disease, about which the medical text books have very little to say. A few lines is about all the space allotted to the subject. The medical journals however are reporting cases from various sections of the country, chiefly from the South and most of these are from Texas and Florida.

The disease is most common in Russia—also common in the Shetland Islands and in Norway..

H. Tamura (Brit. J. Demat. March, 1921) reports a case of creeping eruption observed in February, 1918.

The worm was confirmed to be a species of Gnathostoma, and is called Gnathostoma Siamense because 4 cases were reported from Siam; 43 cases now reported.

The writer states that Knowles was the first in America (1916) to discover the parasite in section, and that without foundation he has asserted it was the gastrophilus larva.

In many cases the worm travels in the epidermia. In this writers case the tunnel made by the parasite was partly in the epidermis and partly between the epidermis and corium. The common feature in the cases reported is that a linear lesion is formed in the human skin extending day by day.

Report of case: Woman 41 years. Appealed to this writer on account of a pricking papule on the right chest, which proved to be caused by the Gnathostoma Siamense, and produced the characterisitic linear lesion. The lesion was opened and the parasite extracted under local novocaine anesthesia. It was 9 mm. long and 1 mm. wide. Its color was blood-red. Put into human serum it made active, wave-like movements, which ceased about half an hour later. The entire lesion was excised. The rate of extension had been 4.2 cm in 22 hrs. 38 min.

Read before the South Carolina Medical Association, Rock Hill, S. C., April 20, 1922.

Review of the Literature.

1. R. J. Lei's cases 1874—Clin. Soc. Trans. London 1875.

2. R. J. Lei's cases 1884—Clin. Soc. Trans. London 1884.

No description given of the parasite or tunnel.

3. Crocker's case (1892)—in which the larva had traveled in child's skin 2 years 3 months.

4. Newmans case (1895)—First case reported in Austria.

5. Samson's case (1897)—In Russia "Papular form—"

J. L. Kirby-Smith (J. Florida M. A. Oct. 1917), from Jacksonville, Fla., states that 80 per cent of skin lesions seen by him in young people during the summer months, or fall, if the rainy season has been prolonged, are of this nature.

The larva has been obtained by him on 3 occasions,—and by Dr. Henry Hanson, formerly of the State Laboratory. They agree as to the findings.

Dr. Rille, Professor of dermatology at the University of Leipzig also successfully recovered the larva. He is of the opinion that a fly of the gastrophilus variety is productive of creeping eruption in man. It is prevalent in the Southern States, near large bodies of water, or swampy regions, especially the Gulf and South Atlantic States.

Dr. Kirby Smith has had examined the stools of a number of patients with Creeping Eruption and no intestinal ova were found. It is not probable that there is more than one larva in the individual creeping lesion, nor is it conceivable that the larva has the function of reproduction in its wandering in the skin. The first few days the larva may only pass over 1-2 inch of

space, while at a later day several inches may be observed to have been covered during one night by the rapidly growing larva.

The patient can feel every turn in the boring movements of the larva and his suffering is great. No febrile or toxic condition has been observed.

Joseph V. Klander and Sigmund S. Greenbaum (Arch. of Derm. and Syph. 1921) also discuss the subject of Creeping Eruption. According to these writers, Creeping Eruption, or Larva Migrans, is a relatively rare disease in this country. There are only 13 references in literature to the disease occuring in the United States.

It is more frequent in children. The hands and feet and adjacent areas are most affected. Exceptionally the face, buttock and trunk.

The prominent cutaneous lesion produced is a burrow which is a raised, erythematous linear lesion, serpiginous and at times circinate in outline.

These wrters assert that it is readily amenable to treatment, sometimes spontaneous disappearance of the disease. One of the cases was entirely cured in about 5 days after the daily application of tincture of iodine to the entire length of the burrow.

J. B. Shelmire (Texas So. J. M. Feb. 1918) says that Van Harlingen in 1902 reported the first case of Creeping Eruption in America. In 1903 and 1904 Stelwagon and Hamberger reported cases. The writer reported the next and first case from the South. He claims it is more common inTexas than in other parts of this country. Occurs principally during the warm months, carrying out the theory that the larvae are derived from the ground, after passing through the intestines of the horse. He claims the priority in the use of ethyl chloride as a treatment.

Dr. Whithouse reported a case (J. Cut. Dis. 1917) which during the summer had 38 distinct and active foci. The patient had contracted the disease on the Texas border while a member of the U. S. Army. Four others besides himself, could definitely trace the disease to a certain ranch in Texas, where they slept on the ground.

Case: Child, age2, probably contracted the infection from a sand pile. Having in 1915 promptly cured 2 cases by freezing with ethyl chloride, it was used in this case also. The spray was used for 40 seconds only. A decided blister was made and the larva destroyed.

As to treatment Smith says that the idea is to destroy the larva at one sitting, with a sharp scalpel shave off the epidermis over the end of the furrow and to some extent the nearby skin; this can be done with very little pain. Immediately apply a mixture of equal parts of tincture of iodine and phenol, next freeze thoroughly with carbon dioxide snow. This is easily done, but the ensuing blister is apt to become infected and it is some time before the parts are well.

The measure is not so applicable to lesions on the feet. The high frequency annodes is at times the most satisfactory measure, but in children this is hard to carry out, and is not so certain as the knife.

A number of caustics have been used, nitrate of silver, nitric acid, and carbolic acid, applied directly to the furrow, and painted around the extending lesion, but these measures can not be relied upon. Injections with a small hypodermic needle of various chemicals have been tried, among them chloroform, tr. iodine, formalin. It is a difficult and impractical procedure with a struggling child.

Keratolytic pastes and solutions have been tried with indifferent success, as has been the results with strong irritating solutions of bichloride of mercury.

The best palliative measure is the ice bag or ice cold water, with the parts so treated, for a few minutes the patient will have a short respite from the continual intense itching.

During the day there is very little activity

of the larva, especially on the exposed parts.

In "A Note on the Treatment of Larva Migrans," Lloyd W. Ketron (Arch of Derm. & Syph. 1921), says; since the parasite causing the creeping eruption lies in the skin some distance from the end of the visible burrow, its demonstration is difficult, either for the study of the insect itself or for its destruction.

The usual methods for destroying the larva are frequently unsuccessful.

They are:

1. Injection of various cauterizing agents.
2. Excision.
3. Iodine and phenol (Crocker).
4. Cocainize around end of burrow and inject chloroform (Hutchins).
5. Apply chloroform over the end of the advancing burrow 10 min. at a time, several times daily (Hartzell).
6. Apply cataphoretically a solution of mercuric chloride (2 grs. to the ounce) around edege of burrow and touch the suspected site of the insect with nitric acid. Stelwagon cured 4 patients with this method.
7. Method of Ketron or Shelwire. Which is as follows:

Case reported by Dr. Ketron:

Patient young man 28 years. Aug. 1920 foot became infected in N. J.

Treatment and Course: Usual methods were tried several weeks and were unsuccessful. Two larvae were found on same foot. Pure phenol and later injection of alcohol failed. Opening the active end of the burrow with a fine scalpel failed to locate the parasite.

Finally, an area the size of a 25 cent piece around the end of the burrow was frozen solid with ethyl chloride. Both sites of the infection were thus treated, the freezing causing practically no local reaction nor discomfort. Three months later patient reported he had had no further trouble.

Gentlemen; you have been given a short resume of the literature on this subject. It will be noticed, that the remedies suggested by the different writers, do not seem to give uniform results. Whether this is due to faulty technique has not been proved.

The method used by the writer has been constant in results, painless and may be used without any fear of bad after effects.

Treatment: After having tried most of the remedies suggested in the limited literature,—this being in 1912—and several not mentioned, phosphorus dissolved in olive oil was tried, and its use was followed by most satisfactory results, not only in the hands of the writer, but in cases treated by other physicians.

Care must be taken in the preparation of the solution, because if too much friction is made it wll tend to blaze. Any competent pharmacist will experience very little trouble in the making. Many minutes are at times required in getting the chemical to dissolve, depending entirely on the strength desired.

The strength of the solution found to be the most satisfactory is from 2 to 3 per cent of phosphorus in olive oil.

The application should be made all along the burrow, using some friction. A cotton swab rolled tightly will be found to be satisfactory. It should be used several times a day.

Case Reports:

Mr. D. Farmer, age 50 yrs. Seen June 10th. 1912. Presented two foci, one below the patellar, right knee, the other on the index finger.

The disease was easily diagnosed, having the characteristic linear eruption, the red elevated line near the active, itching extremity, and visicular where it had previously traveled. The intermittent attacks of itching, mostly at night, and the onward progress was typical.

Stelwagon had suggested high frequency, and it was given a thorough trial. This was used 14 times, until the skin showed marked burns, with out any but temporary relief. Phosphorus was used and in a short

while all of the symptoms disappeared, and have remained so.

This patient had used iodine for several days before consulting the writer, without benefit.

H. C. Age 5 years. Infected on dorsum of foot. Was seen at the time the patient just referred to was being treated. High frequency under general anesthesia used twice without relief. Phosphorus used and recovery prompt. No recurrence.

M. W. and P. Two little girls 4 years old, living in the same house and playing in the same sand pile were infected, each one on the dorsum of the foot. Recovery prompt in one, the other responded quickly when the strength of the solution was increased.

Mr. R. S. S. daughter. Age 3. Foci on ankle.

Was seen in consultation with another physician who had been using the treatment outlined. There had been no improvement. The strength of the solution was increased, recovery was prompt.

J. J. Farmer. Age 45. Infected ankle. Recovery prompt under treatment. No recurrence.

C. G. R. Bank President. Infected ankle. Prompt recovery. No recurrence.

Mrs. M. D. Infected inner ankle. Prompt recovery. No recurrence.

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DISCUSSION:

Dr. C. J. Lemmon, Sumter:

Dr. Mood's paper is a distinct contribution to the literature on skin affections. I wish to congratulate him upon his original method of treatment. His treatment is very simple and requires no special technique.

The diagnosis is very simple if we remember that there is such an affection as Creeping Eruption, for the diagnosis is made almost by inspection. There is a lineal red line, which may be either short or long, or it may be curved, but it never bifurcates. The itching is most intense at night, the time when the larva burrow around in the skin.

There are two forms of effective treatment: excision, and Dr. Mood's method. Excision is objectionable because of the scar and the pain and discomfort of surgery. I would not recommend it when we have such a simple and effective method as Dr. Mood has described.

Before leaving home I called up four physicians in Sumter and asked if they had had any cases of Creeping Eruption. Two said that they had had from four to six cases. One physician said that he had tried almost all of the antiseptics mentioned in Dr. Mood's resume of the treatment, with unfavorable results. When he learned of the phosphorus method he used it with prompt success. All of my cases have been cured with two per cent solution, except one. I had Dr. Mood to see this case with me, he confirmed my diagnosis and increased the strength of the phosphorus solution to three per cent, and that effected a cure very promptly.

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Dr. F. A. Coward, Columbia:

It is not usual for a general practitioner to go into work which really applies to public health. As Dr. Mood says, you gentlemen will be suprised to learn that we have such a thing as creeping eruption in this State, and that we have typhus fever and other things. We have these tropical diseases, and we are picking the mup one by one. What we want you men to do is to do what Dr. Mood has done, report them and let us study them. It is really intensely interesting.

When it comes to treatment, the Doctor's treatment is very clever, certainly very cleverly thought out, and I think that we owe him a vote of thanks for studying out this thing.

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Dr. A. H. Hayden, Columbia:

There is something appalling in the ignorance of the treatment among general practitioners of these conditions. I had the privilege of seeing considerable original re-

search work by one who I consider today was at that time one of the greatest diagnosticians in America. I refer to Dr. John Guiteras, then of the U. S. Public Health Service, now of Cuba. He was the first one to discover filaria in Charleston, where he did some original research work and made some very elaborate reports about 1886 or 1887. That was in the days of the cisterns, which we do not have now. The first case was in a man who had, to my knowledge, several repeated attacks of chyluria, which Dr. Guiteras said was due to the filarial infection. This man happened to be a night watchman, and we could never find the filaria in his blood in the early evening hours. But when we thought it out ,that his habits were the reverse of ours, since he slept during the day and was active at night, we examined his blood in the day time and found the filaria.

I also saw quite a number of cases of several forms of leprosy. There are quite a number of cases throughout the State, unrecognizable by the average man, and it would repay the profession to consider them.

## AORTIC INSUFFICIENCY

*Thesis by J. F. Woods, Member of the Graduating Class* 1922, *Medical College of the State of South Carolina, Charleston, S. C.*

(Continued)

*Diagnosis*

The diagnosis of aortic regurgitation is not very difficult usually. Unless the disease is complicated by other conditions, such as mitral insufficiency, the diagnosis should be easy. The diagnosis demands the presence of a diastolic murmur at the second right or third or fourth left interspace. The murmur may be absent, in which case a certain diagnosis should not be made. The signs of left ventricular hypertrophy substantiated by X-ray plates if necessary, the peculiar arterial pulsation, high pulse pressure, and the "Corrigan pulse" are enough upon which to make a diagnosis of aortic regurgitation. The pistol shot sound and Durozie's sign are confirmatory evidence. The differential diagnosis is harder. Dilatation of the aorta, grave anemias, tuberculous mediastinitis, mitral stenosis, and pulmonary regurgitation are the chief conditions from which the disease must be diagnosed. Dilatation of the aorta associated with aortic insufficiency is frequently mistaken for aneurysm. It may be accompanied by very marked pulsation in the second right interspace and even of the upper portion of the sternum, with dullness in these regions. The X-ray will clear up the diagnosis.

The existence of a functional aortic insufficiency from transitory dilatation of the aortic ring can only be definitely diagnosed when an aortic diastolic murmur and an abnormally high pulse-pressure have been present and passed off. This is a rare occurrence. From mitral stenosis and from pulmonary regurgitation, a very rare lesion, the disease is distinguished by the presence of predominating hypertrophy of the left ventricle with a heaving apex impulse and the arterial phenomena common to aortic regurgitation. Bronchial features may be present as in any other form of heart disease when pulmonary compensation is broken. The symptoms of arterio-sclerosis may cause confusion and must be differentiated, such as anginal attacks.

*Prognosis:*

In aortic regurgitation the prognosis is almost always towards a premature death, sudden or gradual. In some rare instances cases of aortic regurgitation have survived twenty-five and thirty years but this is quite an exception. The prognosis depends upon several factors such as the age, activity, habits, temperament, and general condition of the patient, together with the degree of the lesion and the specific kind of lesion. An accurate history upon which to partially base the prognosis can not al-

ways be secured as is evident from reviewing the cases of aortic regurgitation in Roper Hospital. The prognosis depends in a large degree on the kind and severity of the symptoms present, and as the symptoms are divided into two main classes, those occurring before and those occurring after decompensation, much depends upon the stage in which the case is first seen. Aortic incompetency may be fully compensated for years; the discovery of the lesion may be more or less accidental. When this is the case if the patient is warned and the true state of affairs explained to him, then with proper living there is a fairly good prognosis. As age advances the prospects of life grow less and less. Arteriosclerosis is generally coincident with old age. In the elderly, those beyond 40, the cause is usually arterio-sclerosis or else this condition is an associated one. In youth the lesion does not often result from sclerosis, and the coronary arteries are unaffected. The cases which last the longest are those in which the insufficiency follows endocarditis and is not a part of a general arteriosclerosis. Co-existant lesions of the mitral valves tend to disturb compensation early. The prognosis in those who do laborious work is very bad. If possible a change of occupation should be made, choosing one that will not require heavy muscular work. Nervous, high strung patients offer worse prognosis than those of even temperament. Likewise those who have led an intemperate life do not withstand the ravages of the disease as well as those who have lived a moderate life. As has been stated, a low diastolic indicating peripheral dilatation acts as a safety valve to the diseased heart. The diastolic blood pressure is to be taken into consideration for this reason in making a prognosis. An increase in the heart vertically is of good omen, but an increase horizontally means that the reserve power of the heart is being rapidly consumed, and the prognosis should be judged accordingly. Angina pectoris in regurgitation is always manacing by vagus stimulation; yet if it persists it may be controlled by nitrites. If the bundle of His is intact, the heart may be protected by atropine, perhaps for a year or two; but the respite is a troublesome life—a life of pain, of slavery to drugs, and of bitter adversity, physical and mental. In regurgitation in the young the result of syphilis the prognosis is uncertain, but thorough anti-syphilitic treatment may check the disease.

When compensation begins to fall the prognosis is grave and more doubtful than ever for sudden death is imminent at all times. The degree of decompensation has a direct bearing on the prognosis.

Other sinister signs before decompensation occurs fully are increasing pallor, vertigo, tinnitus, arrhythmia, and an increasing frequency of pulse rate that is not temporary, denoting a larger residuum at each contraction and poorly filled arteries. An especially grave sign is a stationary or reduction in blood pressure following muscular effort.

When decompensation fails the main symptom is dyspnoea, or a tendency towards it on exertion in the beginning of decompensation. This tendency to dyspnoea is a good index of what is known as "the reserve power of the heart". In advanced cases of aortic regurgitation with pleural effusion and pulmonary edema it is easy to understand how the movements of the lungs are interfered with and dyspnoea is produced. But pleural effusion and pulmonary edema are rather rare in aortic regurgitation, not so in regards to the tendency towards dyspnoea. In such instances the tendency is caused by limitation of the movements of the lungs, which is due, it has been suggested, to an increased pressure in the pulmonary circulation with engorgement of the blood vessels and a consequent interference with the elasticity of the lungs, In patients with heart disease in general, aortic regurgitation included, Dr. Francis W. Peabody has measured this tendency to dysp-

noea indirectly by measuring the vital capacity of the lungs, which is the volume of air in a complete expiration after the deepest possible inspiration; or in other words he has calculated the decrease from normal in the limitation of movements of the lungs. The estimation of the vital capacity of the lungs can be made with a simple spirometer such as is found in almost any gymnasium.

In an attempt to simplify and make the estimation of the vital capacity of some clinical importance Drs. West, Dubois, Peabody and others have conducted a number of experiments. Dr. Peabody concludes that the estimation aids us in estimating the functional condition of the heart in that it gives direct indication of the tendency to dyspnoea and a fairly accurate quantitative index of the changes in the tendency to dyspnoea which are associated with the changes in the reserve power of the heart. So far the facts as brought forward by them have not been utilized by the profession as an aid in prognosis and treatment, but they may become of great value in the future. After all, the general condition of the patient as summed up by the physician after correlating the symptoms present with the physical findings is the best factor upon which to make even a guarded prognosis. Aortic regurgitation is the one cardiac disease especially in whch must be remembered that "Man supposes but God disposes".

In the 63 cases studied from the records of Roper Hospital the average number of hospital days was 26.3. A large percentage of these cases entered as compensation was falling as evident from the symptoms given. Of the total number 64 per cent. was discharged improved, and 36 percent. died. There were too few autopsies reported to give any fairly accurate estimation as to whether the clinical diagnosis was the correct one.

(To be continued)

## CANCER FROM THE VIEWPOINT OF THE PATHOLOGIST

*By H. H. Plowden, M. D., Medical College of the State of South Carolina,, Charleston,, S. C.*

Consideration of the Cancer problem by the Pathologist is not, in essential details. different from the view-point as held by the Surgeon and the Internist. He recognizes it as a constantly increasing menace. the cause of which is not known, and the cure for which requires proper education to each individual who, when consdered collectively, constitute the population of the world.

The cancer problem, as it exists today, has a much greater significance than that with which the disease itself was invested by those who first fancied a similarty between its local manifestation, the tumor, with its "roots", and the crab, with its claws, and who applied to it the term "cancer" or "crab".

These ancients who studied the disease had no conception of its prospective importance as a problem of far reaching importance to the human race. The deaths from cancer today number more than a half million annually among civilized peoples alone. It is also certain that the disease is increasing with alarming rapidity, and affecting ever younger and younger ages. If these things be true, then we have here a problem which, if not solved, bids fair to almost exterminate mankind. Even if, as is certain, this is too grave a prospect, cancer is nevertheless the one major problem of medicine still defying any real approach to solution, as regards prevention, reliable early diagnosis, or guaranty of permanent cure.

The tumor was thought by early observers to be the manifest effect arising from the "roots" in the body because of some constitutional condition. Today we know that the exact opposite is true. The tumor is the starting place, and its "roots" are the

offshoots by which it sends out "runners" to the contiguous territory, extending further and further, by minute or by manifest passages, far beyond the original location, until the whole body is invaded.

So, today interest in the "cancer problem" has carried it, by one kind of "runner" or another, into every phase of life. Not only is it a topic for discussion in the operating room and the medical convention, but in the home, in the business office, in the lecture room, and even in the halls of legislation. "Is it contagious?" "May it be inherited?" "Is it caused by certain kinds of food?" "It is influenced by environment?" "Can it be cured?" and so on until the possibility of further questions has been exhausted. Therefore, the duty of the medical profession is to inaugurate a campaign designed to teach the layman the facts about cancer.

Much of the mystery which surrounds cancer, much of the ignorance concerning it, both within and without the medical profession, is due to the chaotic condition of the literature upon the subject. To acquire dependable information concerning any phase of the question entails tedious search through many books, pamphlets, and periodicals. To give a clear, concise, comprehensive and available resume of the world's work with reference to cancer, its history, distribution, etiology, diagnosis, possibility of prevention, and treatment, is a most difficult task.

With the awakening of wide-spread interest in cancer there will arise a definite need for a book of ready reference, of convenient size, giving in succinct and availabble form a summary of knowledge concerning the subject, and the next rational procedure should be the undertaking of such a task by a man of the medical profession whose standing is secure, whose reputation is national, and whose word is truth.

The professional responsibility of the Pathologist, in this country, at least, ends with the confirmation or the proving of the incorrectness of a diagnosis of malignancy either at or after surgical operation. The distinctions between benign and malignant tumors involve questions of interest from both the theoretcal and the practical sides. If malignancy were a purely clinical conception it would be impossible to draw any rigid distinctions between benign and malignant tumors since nearly all tumors may occasionally prove fatal. Yet the tendency is to restrict the term to tumors which exhibit certain features which are essentially deleterious to the host. The most important of these features are infiltrative growth, local destructive properties, recurrence after removal, formation of metastases, local interference with function and general toxic action of absorbed tumor products. These elements involve both anatomical and clinical effects.

Infiltrative growth is the most important of the anatomical factors in malignancy. This property facilitates local and general extension, renders removal difficult, is responsible for many recurrences, and is a constant preliminary to the local destruction of tissue. The controlling influence of encapsulation is seen in the harmless course of many very cellular tumors which may readily be enucleated while circumscribed but which on rupture of the capsule take on infiltrative and malignant properties.

Rapidity of growth is usually associated with infiltrative qualities and deleterious effects, and, if carefully separated from simple increase in size from other causes, is a nearly constant sign of a dangerous tumor. Local destruction of tissue is a variable feature prominent only in certain types of tumors, appearing early in squamous epithelioma, and constituting the sole malignant quality of rodent ulcer. In benign tumors, tissue destruction is a secondary effect of pressure. Hemorrhage from destruction of vessels may be the chief factor in cachexia which marks the course of many ulcerating tumors as in the stomach and uterus. Pain from nerve involvement

is often and even the last clinical problem in the course of a malignant new growth.

Formation of metastases may be held to constitute any tumor malignant. Being usually the result of infiltrative growth, invasion of vessels, and cellular character, and indicating collapse of defensive powers, it is the most impressve external sign of malignancy. It is, however, by no means constant in malignant tumors, as in glioma, rodent ulcer, etc., and certain tumors otherwise benign may rarely give rise to distant secondary growths, as chondroma and myoma.

The prediction of the course that a given tumor will take is based upon two sources of information, anatomical and microscopical diagnosis and accumulated experience regarding the usual behavior of tumors of known histological structure.

The main subdivisions of tumors into benign and malignant is accomplshed at once and, as a rule, only by microscopical structure. Under some circumstances, the microscopical structure may stand alone and over-ride all other considerations. Far more usual is it to find the interpretation of structure to be greatly influenced by clinical information regarding the exact location of the tumor, its attachments, the presence of a capsule, the age and condition of the patient.

A fairly general idea of the malignancy of a tumor may be based on the distinctions between *adult,* and *embryonal* or *anaplastic* growth. It has long been recognized that the greater the variation in type between a tumor and its originating tissue the more malignant the tumor. Yet here is encountered the difficulty of distinguishing between original embryonal qualities and signs of acquired anaplasia. One group of tumors arises from embryonal cells which have lagged behind in development and such tumors bear an embryonal stamp. The histological signs of this embryonal character are often difficult to distinguish from the signs of anaplasia. The theoretical value of the distinction between embryonal and anaplastic cells is not, however, equaled in importance, since both types of tumors, especially the latter, may be malignant. The histological signs of anaplasia, or ordinary malignancy, are a cellular character, marked variations in size in either directon from the orginating cells, increase of chromatic nuclear substance, abundance and abnormality of mitoses, and loss of polarity and diffuse infiltrative growth of cells. Equally important are the general signs of unusual nutrition and vitality of the cells. Upon these features one may safely base the estimate of growth and potential malignancy of tumors.

# DERMATOLOGY AND SYPHILOLOGY

J. RICHARD ALLISON, M. D., Columbia, S. C.

## HAEMATOGENOUS INFECTION IN TRICHOPHYTIA

*Prof. E. Bruusgaard. British Journal of Dermatology and Syphilis.*

Prof. Bruusgaard in this article has given us the first definite proof that certain skin eruption caused by a fungus may be brought about by a haematogenous infection. He cites two instances with conclusive proof. The first a trichophytia infection of the beard, with a papular eruption on the arms and legs. By histological study he proved that the papular eruption on the body was caused by a haematogenous infection carried from the primary infection in the beard. The second case was a generalized fungus infection on the body carried from the primary infection which in this case was a trichophytian infection of the scalp. Heretofore we have considered all trichophytia as local in all its manifestations. Frequently it has been noted that in certain cases of trichophytia profunda with severe symptoms of inflammation are often accompanied by acute exanthemata of varying appearance, but the possibility of their being due to the primary trichophytia has not been considered. The eruptions in these cases often resembles erythema nodosum and it is an entirely new departure from previous knowledge and clinnical experience to consider these conditions due to a primary trichophytia. It opens up a new field of thought and practice in skin disease in that it explains the origin of many skin manifestations that we have heretofore faled to understand. He shows further that it is possible to cure many of these conditions by the injection of an extract of trichophytom culture. The reaction from this form of treatment is often rather severe, but usually brings about a body resistance which cures the disease and gives a certain amount of immunity to the patient against future attacks.

We do not conclude from this article that it is an easy matter to prove in each case that the fungus can be recovered from the secondary lesions, or trichophytides as they are commonly called. Just the opposite is the case. These two cases are the only ones in which the author has been able to prove definitely to be trichophytides from an haematogenous infection from among many cases he has felt certain from the clinical picture were cases of trichophytides He compared the difficulty one has in recovering the fungus from the trichophytides in cases of trichophytia to the great difficulty experienced in finding the tubercle bacillus in the tuberculides.

Since this is a rather new subject to many, an explanation of certain terms here used is necessary to fully understand the subject under discussion. Trichophytia is a rather loose term applied to a wide variety of skin conditions, due to fungus growth. Under this heading comes what is commonly called ring worm infection, also certain subacute and chronic eczemas which have been shown recently to be due to a fungus infection and classed as trichophytia. Those conditions which are secondary to a primary trichophytia are called trichophytides. Some of the older names applied to these conditions are ground itch, pompholyx, all the tineas which includes a wide variety of infections of both the hairy and non-hairy regions, and eczema marginatum. Since so many of these conditions are fairly prevalent in South Carolina, this subject should be of peculiar interest to all of us.

# UROLOGY

MILTON WEINBERG, M. D., Sumter, S. C.

## ADVANCES IN SURGERY OF THE KIDNEY

The advances that have been made in kidney surgery are no less brilliant than those in other fields of surgery and far more so than in many. Within the past fifteen years, the progress has been most notable. In 1885, Dr. S. D. Gross collected statistics on 450 kidney operations, showing a morality of from 20 per cent. to 60 per cent. Fifteen years ago, and even now among a very few, the death rate is as high as 25 per cent. In 1912, Dr. Gerster had a mortality of 21 per cent. in 112 cases.

At present, among those who employ modern urological methods, the mortality is from 1 per cent. to 5 per cent., the higher mortality here depending almost entirely upon a type of severe cases of renal infection that must be dealt with. The following statistics will serve to show the very low mortality of today: Caulk reports 263 kidney operations with 5 deaths, 1.9 per cent. Four of these deaths were following operation for severe infections. In 1919, 291 kidney operations were performed at St. Mary's Hospital, Rochester, Minn., with five deaths, 1.6 per cent. During the same year, there were 10,280 operations of various kinds in this hospital, with 1.7 per cent. mortality. Of these, 5,671 were abnormal operations with 2.8 per cent. mortality. It will be seen from this that the mortality rate in kidney surgery is about the same as that of the average operation and less than that in abdominal surgery.

The results from kidney surgery cannot be excelled by those of any other branch, when done on patients who need such operation, at the proper time and in the proper manner.

First of all, a thorough knowledge of renal anatomy, physiology and pathology is essential. These subjects are now very clearly understood in regard to the kidney.

The diagnosis of the renal disease must be made accurately. This can usually be done only by the more advanced urologic methods. By making a accurate diagnosis, it can in this way be ascertained whether a nephrectomy, nephrotomy, a resection of the kindney, or a pelviolithotomy or nephropexy should be done. Furthermore, as a rule, by the employment of such methods we can find out the condition of the other kidney, deciding whether or not any operation should be done. It is very important to catheterize the supposedly healthy kidney and determine its function before attempting operation on the diseased organ. It will be found, too, that many kidneys badly damaged from disease, can be treated through the ureteral catheter and the function thereby becoming markedly improved and sometimes practically restored to normal. In this way, many kidneys will be saved from operation. Frequently, when an operation must be done, the patient's general condition can be benefitted by proper preliminary treatment and usually the patient can be made a good surgical risk out of a bad one.

It is very timely to speak of pre-surgical kidney lesion. A very large percentage of operations that are now being done for renal disease could easily have been avoided if proper treatment had been given and early enough. The average case that comes to operation for surgery of the kidney has had the condition for four and one-half

years, sufficient time with almost any kind of infection to permit marked renal destruction. The most of them were treated only with drugs, either the alkalies or urotropin or alternating these; many also getting useless bladder irrigations, and were not treated by proper urologic procedures. This is especially true in chronic pyelitis,, hydronephrosis, stricture of the ureter. Also many unilateral cases of renal tuberculosis, which are usually curable by operation, have become bilateral and hopeless by not making the diagnosis early. In some cases of renal calculus with infection, the kidney may be saved from destruction by timely ureteral catheterizations. A great many of these cases are wrongly treated for a long time usually with drugs alone.

By careful urologic examination, many useless appendectomies could be avoided. 30 per cent of the cases of renal calculi have had previous appendectomy; a great many cases of pyelitis, stricture of the ureter and other urinary conditions have suffered the same fate. Owing to more careful examinations now being generally made, the number of useless appendectomies are decreasing. It remains, however, for more careful examination of the seminal vesicles to be made to further avoid mistakes in diagnosis of chronic appendicitis. The vesicles have a peritoneal lining and on account of this, abdominal symptoms are not infrequent in seminal vesiculitis.

In summary, the low mortality in renal surgery is now due to the following general considerations: 1. Accurate diagnosis of the kidney lesion; 2. Accurate methods of determining whether or not operation should be done; 3. Improved methods of applying pre-operative treatment. 4. Good judgment in determining the type of operation after it is decided that it should be done, whether it be a nephrectomy, nephrotomy, resection, nephropexy, etc.; 5. Careful examination of the patient as a whole; 6. Proper post-operative treatment.

# PEDIATRICS

WM. P. CORNELL, M. D., Columbia, S. C.

## THAT SCRAWNY SCHOOL CHILD

We are all called by anxious parents to advise regarding the children of school age who have lost their appetite, become cantankerous in disposition, picayunish in eating, lazy about ther life and studies, and who have lost weight and strength, and look pale in color or sallow.

The parents fear that their school duties are too hard or that there is some hidden illness, and seek our help.

Remembering that tuberculosis is the one very common chronic disease of childhood, 75 per cent of all children at ten years of age have been found by numerous observers to react to the skin test, be careful to strip the child to the waist and go over the chest minutely with the stethoscope, making the child cough and then inspire deeply to bring out the fine moist rales. Also, listen closely for the d'Espine sign of enlarged bronchial glands by getting the child to whisper ninty-nine and listen over the spines of the dorsal vertebra. Normally the amphoric whisper is heard to the seventh cervical spine, when heard to, or below, the third dorsal spine it constitutes d'Espine's sign of enlarged bronchial glands which are usually, though not necessarily tuberculous.

Tuberculosis may lie dormant in these glands, without any lung involvement, for years in childhood, to be activated by any state of congestion such as would be brought

about by measles, grip, or whooping cough.

If d'Espine's sign is present, or any rales are elicited, have the von Pirquet skin test made and, if this is present, have made an X-Ray of the chest to determine the diagnosis and extent of the disease.

Examine the teeth and tonsils, and the glands under the jaws, for focal infection and correct same if found, also make sure that the urine shows neither albumin, sugar nor pus, and that there are no ova of intestinal parasites in the stool.

Having excluded, or corrected these think next of that very common and distinct entity at this age, namely malnutrition brought on by faulty dietetic regime. Here you will elicit, upon inquiry, a history of eating between meals, all sorts of fancy, nice tasting foods, especially sweets such as cakes, candy chewing gum, ice cream, fruits, nuts, syrups, jams, crackers and biscuits, etc.

What is one child's sweet is another child's poison. Some children simply cannot stand sweets, and almost any child who starts nibbling sweets soon acquires a craving. A little sweet taken an hour before meal time checks appetite and in a short time they will lose all desire for the plain, tasteless cereals, vegetables and meats, and eat sparingly at meals with the result that shortly after meal time they get up a slight hunger and satisfy it with a little sweet.

Before long their disposition changes and they become cross and nervous; they tire easily; their appetite fails and they rest badly at night to waken tired out and with dark circles under their eyes, and a sallow or muddy complexion. Their mother gets worried and tries to tempt their appetite with dainties and sweets and the condition gets steadily worse and they begin to lose weight and strength. Mother now begins to plead and beg, and even bribe, them to eat until they become thoroughly spoiled and cross and unfit to live with, and finally, through malnutrition and lowered resistance, they go down with some sickness, probably a sore throat or severe coryza.

Such is the picture familiar to all doctors and most parents.

Providing the hearty and real co-operation of the parents can be obtained there is an almost absolute and sure way of quickly overcoming the trouble, and no medicine is needed or desired. Explain clearly to the parents, and the father must promise to do his part, and get their consent to co-operate for one week. Then order all feeding and nibbling between meals of whatever kind to be stopped, especially all sweets of every description. See that the child comes to table at regular meal hours, and have the ordinary meals prepared. Let the child alone, and dont beg, nag or bribe her to eat anything, but do not give anything between meal hours, make her wait until the next regular meal and then repeat the process and appear absolutely indifferent as to whether or not she eats, let her severely alone.

Her acquired stubborness may hold out for three days, but by then, and usually on the second day, she gives in and lets her natural appetite overcome her pride and the battle is off. Very soon a hearty, appetite for sensible, hunger satisfying foods, that the parents and everyone else is eating, returns and from now on it is simply a question of not pandering a child's sweet tooth. All symptoms rapidly disappear, the natural strength and color return and the natural sweetness of disposition, inherent to the healthy child, makes her once more the pet of the family and neighbors, and of the school teacher.

# SURGERY

SAMUEL ORR BLACK, M. D., Spartanburg, S. C.

## OSTEOMYELITIS

Clarence L. Starr of Toronto, Canada, writes interestingly of acute early osteomyelitis in the Archives of Surgery, May 1922.

He states that acute osteomyelitis is practically always a blood borne infection. That frequently a severe strain or a direct blow causes an extravasation of blood into underlying tissues and that this diseased area offer hospitable reception to micro-organisms coursing through the blood. These micro-organisms may be in the blood as a result of previous sore throat, a discharging ear, a suppurating ingrowing nail, furuncles in the skin, or what not.

Osteomyelitis is essentially an inflammation of all the structures of the bone, including the periosteum.

It is primarily a disease of children. This is due to the fact that growing bone is less resistant and that the epiphysis has not yet become an integral part of the bone itself.

Starr takes issue with the time honored conception of invasion and spread from the initial point of infection. Commonly, heretofore, it has been thought that the infection spread through the cancellous bone direct into the medullary cavity. He believes and apparently proves by Roentenology as well as by miscroscopic study that the infection spreads from the cancellous bone along the epiphysis to the periosteum; where pus forms. The pus then extends upwards or downwards as the case may be, beneath the periosteum stripping it from the bone then inwards, by way of the Haversian canals to the medullary cavity.

Microscopically, he found quantities of the causative organism and Monomuclear and giant cells, indicative of inflammatory reaction, in the cancellous portion of the bone close to the epiphysis, as well as in the adjacent periosteum, but close scrutiny of the contents of the medullary canal failed to reveal any organisms or inflammatory reaction whatsoever. Similar studies made at a later stage did show micro-organisms and inflammatory changes in the canal contents.

Cultures made from the cancellous tissue and adjacent periosteum also showed a growth long before the ones made from the medullary canal.

Likewise, X-Ray interpretations furnished similar conclusions, as the periosteum was definitely thickened and detached and bony changes were more marked on the periosteal side, for a greater distance up or down the bone, than in the medullary area.

Starr, very properly insists that the X-ray is of no value in establishing the diagnosis early.

Early diagnosis is to be made by the history of the case, as well as by signs and symptoms. The leukocyte count is unusually high, often 25,000 to 30,000. The diagnosis being made early, an incision over the point of greatest tenderness through the soft parts, and down through the periosteum to the bone itself should be made.

If no pus is here found, the periosteum should be stripped for a distance of one to two inches from the underlying bone to be sure that a pocket has not been overlooked.

If pus is found beneath the periosteum, he states that it is only necessary to institute a drain and that recovery will be complete in from three to four weeks.

If no frank pus be found, he drills three holes, one above the other, obliquely down into the middle of the cancellous bone from

the cortex, being careful not to injure the epiphysis it self or the periosteum between it and the ned of the bony shaft. Within twenty four hours, a line of least resistance, being formed, pus will be pouring freely, and within three weeks the lesion will be healed. Cultures made from the debris removed from these drill holes always show pyogenic micro-organisms.

He insists that trephining an opening into the medullary canal of 2 1-2 or more inches is pernicious practice, when performed at this stage of the process.

In the later stages, he establishes free drainage, and then waits until the sequestrum is separated. He then chisels through the involucrum, lightly curets the cavity, sponges it with iodine, packs it for 48 hours, with iodoform gauze, after which all packing and drains are removed. The dressings are changed from time to time until the lesion has healed.

# ROENTGENOLOGY

FLOYD D. RODGERS, M. D., Columbia, S. C.

## X-RAY EXAMINATION OF MASTOIDS.

The mastoid has come in for a considerable amount of study in the last ten years and the X-Ray has played a very important part in these investigations. In former times very many mastoids were considered normal because of a lack of classical signs—tenderness, swelling and temperature—which are now diagnosed as pathological and operated upon. The clinician, given a history of repeated otitis media, discharging, ear, a low leucocytosis, and a well-made X-Ray plate, can determine very definitely whether or not the mastoid is involved.

Then if the mastoid is to be operated upon, the X-Ray plate is invaluable because of the anatomy it reveals. No two persons have the same distribution or arrangement of mastoid cells, and the cells even differ on the two sides in the same individual. and if, after operation, there is any doubt in the surgeon's mind as to the possibility of having overlooked one or more rather large cells, this question can be easily answered by an X-Ray of the mastoid region.

The roentgenologist can answer very accurately the following questions: position of the lateral sinus, the size and shape of the mastoid; whether the mastoid is completely sclerosed, or whether the sclerosis is evident only about the canal with open cells posteriorly; whether one mastoid is sclerosed and the other normal; the amount of destruction of cellular structure; and in acute conditions, whether or not the mastoid is hyperaemic.

The responsibility for asserting whether or not a mastoid is operative should not rest on the Roentgenologist, but should be decided by the clinician when he has correlated the clinical and laboratory findings in the patient. And certainly the X-Ray examination of the mastoid is more valuable than any other one single process when the mastoid is suspected.

# PUBLIC HEALTH

LEON BANOV, M. D.,
Health Officer, Charleston County,
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## MORE COUNTY HEALTH DEPARTMENTS NEEDED IN SOUTH CAROLINA.

If a complete sanitary survey of South Carolina could be made, a number of starting conditions would be demonstrated.

The first and outstanding fact that would evidence itself to the observer would be that the advancing civilization of which we are so wont to boast, has affected the different portions of our State in varying degrees: and that while a large percentage of our people are living in the twentieth century, there are still a great many today that have not advanced very much beyond the eighteenth or the nineteeth centuries—while a few may be found that would fit in very well with our conception of semi-barbarians and pre-civilization days.

It requires very little argument, in the light of our present knowledge, to convince one that decency as well as physical safety demand that human excretions must be so disposed of, that they will not pollute the food we eat or the water we drink.

The fact remains however, that more than fifty per cent of those that dwell in the rural districts of our State are so careless in their personal habits, that they do not provide themselves with even the crudest type of a privy; and are satisfied to void their discharges wherever they may happen to be when Nature calls—irrespective of their proximity to their home or the homes of others.

It is not surprising that a physical examination of the average person living under such unsanitary conditions, will reveal infection with uncinaria, taenia and other intestinal parasites—in fact the only reason, as far as we can see, that he has not succumbed to typhoid fever or some other intestinal disease, is that by frequent ingestion of human discharges through a number of years, he has developed an immunity of greater or less degree against this type of diseases.

It is mainly on account of this phase of rural life that the natural order of conditions have been reversed; and it is far healthier nowadays in the overcrowded and congested city than in the average rural district—with its fresh air, sunshine and all of the other natural health factors in its favor.

The fact that while the morbidity and mortality rates of organized municipalities have been steadily decreasing year by year, while the rural districts have maintained consistently high death and sickness rates, have directed the attention of sanitarians to the possibilities of rural sanitation; and great strides in that direction have been made throughout the United States during the past ten years.

While heretofore the Health Department has been organized with a view to protecting the city and the organized town, the County Health Department is now coming into its own, and the fact that more than three hundred full time Health Departments have been created during the past few years, with the County as its unit of population, demonstrates the need for such a work.

The sanitary problems of the City and the Rural districts are indentical; only the methods of solving them differ.

The organized City has a decided advantage over the isolated home in constructing sanitary work. The laying of public sewers

and common water pipes can be laid down by a municipality at a comparatively low cost to the individual; and in the construction of this work the highest type of skilled engineers may be employed.

The isolated home, on the other hand, must work out its own sanitary problems—and the manner in which these matters have been met by the average individual has resulted in very little that could be called satisfactory.

The County Health Department has been developed in response to this need for expert advice regarding sanitary problems, and its work in the Counties where this organization has been created has demonstrated the fact that it is just as practical to completely sanitate the isolated rural home as it is the house constructed in the heart of a city.

The immediate results following the creation of a County Health Department, are the installation of safe sanitary types of excreta disposal to replace the old fashioned unsanitary open-back privy or the "privy bush" of the more primitive home.

By a safe and sanitary method is meant any system that prevents soil and water pollution, and protects the discharges against the access of flies; and the fact that this is practical to accomplish in the isolated home is attested to by the fact that the average County Health Department is able to sanitate between five and ten per cent of its population in the first one or two years of its existence.

The type of privy recommended vary from the simple earth pit—which consists primarily of a pit in the ground, over which has been installed a fly proof building, with a seat equipped with closing seat cover-to the septic tank—which is really a private sewerage system and which reduces the discharges by means of bacterial action.

Each type is designed to meet a special condition, and a system that will work satisfactorily in one locality will not necessarily function properly in another.

A knowledge of these various methods of excreta disposal is therefore necessary to the proper administration of a County Health Department.

While it is gratifying to know that there are at least seven full time County Health Departments in South Carolina—each in charge of a Health Officer who has made a special study of rural sanitary problems—we must realize that this work has just barely been commenced in this State.

The time will come—let us hope real soon—when South Carolina will follow in the footsteps of her more progressive sister States, and organize a full time County Health unit in each and every County.

Then—and not until then—will we see a lessening of diseases in the rural districts, and a growing prosperity as a reult of this diminution of disease.

Then, will the hookworm cease to wield its devitalizing power the citizenry of our State, and the sand colored, clay-eating creature in human form that people in our rural districts today, will be replaced by hale healthy and happy individuals capable of meeting lifes burdens and responsibilities.

# NERVOUS AND MENTAL DISEASES

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## "SENILE PSYCHOSIS"

A psychosis occuring usually after the age of 60, due to arterial or tissue changes, presenting a variety of symptoms, and progressing to a fatal termination. A few cases may occur earlier in life and are sometimes called pre-senile psychoses. Involution changes, which are the results of tissue degeneration, show a tendency in certain families. Alcholism has been considered an important factor.

The difference in the intensity of symptoms is marked enough to dove-tail into the ordinary childishness of aged individuals, and to present at the other extreme, a syndrome that may be observed at first sight. A fairly long prodromal period is the rule. During this, complaints may be numerous. Peculiar sensations, vertigo, irritability and morosenes are in evidence. These symptoms are usually followed by delusions, often of a persecutory character. The patients are easily angered and may show uncontrollable outbreaks. Orientation may be good, and they are usually conscious. One of the most striking symptoms of senile dementia is a loss of memory for recent events. They usually are able to recall occurences of long standing, but rember practically nothing that is recent. This seems to be due to lack of impressibility. Failure to recognize familiar faces is common. Reminiscences occupy a lot of the patients time.. Ideas of infidelity toward the husband or wife, as the case may be, apt to be shown. This condition may pass on into a state of confusion which causes the patient to become restless and wander about aimlessly, often at night. Fabrications, often used to supply the deficiencies in memory, are frequently noticeable. Some of these may be noted for the utter absurdity of their nature. During such periods the patients are generally resistive and irritable and beyond all hope of reason. In this condition it is wise to guard against some form of violence by the individual, and attempts at suicide should not be overlooked. They frequently are troubled with headache, and while hallucinations are not especially characteristic, the patient may suffer from marked auditory hallucinations, and possible visual type also. They are often extremely suspicious, and may cause the examiner to suspect a Paranoid condition or a dementia precox.

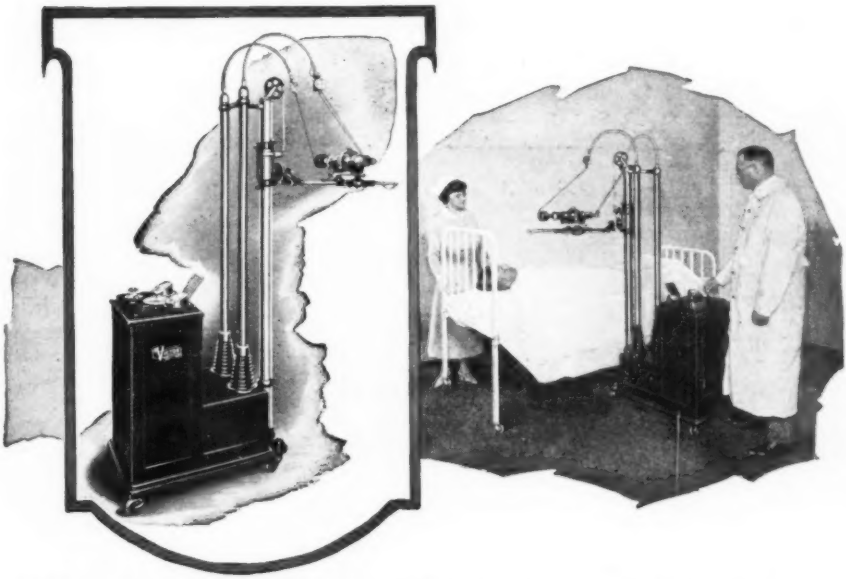
A few mental diseases may at times cause difficulty in arriving at a proper diagnosis. Manic-Depressive insanity may occur at this age, but unless history reveals one or more previous attacks it is fairly safe to assume that one is not dealing with a manic.

General paralysis may present symptoms very much like this disease. The difference in the ages of a paralytic and a senile will give a lead, and laboratory findings should remove the doubt.

The physical signs of an artero-sclerotic dementia are quite difficult to separate from a senile. All cases suffering from senile dementia will show a marked involvement of the cardio-vascular and renal organs, and it would probably be just as accurate to classify these two diseases under one heading.

The physical differences will usually serve to differentiate senile psychosis from paranoid conditions.

Proper respect for the philosophical dictum that, "A man is as old as his blood-vessels" is very applicable in this disease, and never fails to be well verified when handling such cases.



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